integrated circuit layout during the place and route stage in order to reduce the overall noise introduced into conductive paths in a given design.--

In page 2, second paragraph, please replace with the following:

--This manual process is extremely time-consuming and very tedious because moving conductive paths or increasing drivers is likely to cause new noise problems. Those new noise problems must then be corrected, potentially causing yet a third set of noise problems. Thus, manually correcting a circuit layout in order to solve noise problems often requires considerable effort and several very time-consuming iterations.--

In page 4, third paragraph, please replace with the following:

--When referring to FIG. 1 and FIG. 4, it should be considered that driver and receiver labels may be substituted for one another due to the fact that some receivers can actually be drivers, vice-versa. Referring to FIG. 1, layout 10 includes driver/receivers 12 and 14 coupled together using conductive path 16. Further included are driver/receivers 18 and 20, driver 22 and receiver 24. Driver/receiver 18 is coupled to driver/receiver 20 using conductive path segments 26 and 28. At the intersection of conductive path segments 26 and 28, a conductive path segment 30 is coupled thereto. Driver 22 and receiver 24 are coupled to conductive path segments 32 and 34 respectively. Conductive path segments 32 and 34 are further coupled to conductive path segment 30.--

In page 4, fourth paragraph, please replace with the following:

--The present invention analyzes each net (i.e., conducting path between connected drivers/receivers) individually to determine whether a given net is likely to have more than an acceptable level of noise coupled to it from external sources. External

A4 sources are considered to be anything other than net components such as driver/receiver combinations or drivers or receivers individually.--

In page 4, fifth paragraph, please replace with the following:

--Although the coupling capacitance between interconnects is a source of potential coupling noise problems, the symptom of the noise peak is demonstrated at the output of the receiving cell. Different CMOS cells have differing tolerance for coupling noise impinging on their inputs. The choice for the maximum allowable wire length for noise violations to be prevented is therefore not only dependent on the strength of the victim and aggressor drivers, but also on the type of cell at the end of the victim interconnect.--

A5

In page 5, third paragraph, please replace with the following:

A6 --FIG. 3 is a flowchart depicting a method of one embodiment of the present invention.--

In page 6, second paragraph, please replace with the following:

A7 --At block 52, using the noise amplitude vs. distance (i.e., conductor path length) data which is known by those of ordinary skill in the art and the acceptable noise levels previously determined for that given circuit type, it is determined whether the net chosen at block 50 is likely to exceed the acceptable noise levels. That question is posed at block 54, and if the chosen net is likely to exceed maximum acceptable noise levels, it is determined, at block 56, whether a larger driver is available in the driver library which would solve the problem. If so, the method proceeds at block 58 where a larger driver is chosen to replace the previously determined weaker driver, thus solving the noise problem for this net.--

In page 7, first paragraph, please replace with the following:

--If, at step 56, a larger driver was not available, the method proceeds at block 70 where a buffer is placed at a location which would increase signal levels on the net. Locations where buffers (i.e., drivers) are placed may be thought to be locations where the previous net ends and a new net begins. Thus, a buffer is placed at a location which would cause the conductive path between the driver and the buffer to be shorter than would otherwise have occurred. Since the conductive path is shorter, there is less susceptibility to noise.--

In page 7, second paragraph, please replace with the following:

--In order to properly place a buffer so as to minimize the noise in a given net, it is necessary to know the point at which acceptable noise level line 40 in FIG. 2 crosses the curve for the given driver. Thus, if a driver is employed which is represented by curve 62, it is necessary to know where point 72 is located. Knowing where point 72 is located gives you the maximum length of conductive path allowed in order to achieve an acceptable noise level for that conductive path.--

In page 8, immediately preceding first paragraph, please insert the following:

--In another embodiment of the present invention, a net downstream from the stronger replacement driver inserted in block 58, may subsequently be found to have an unacceptable noise amplitude. In this instance, one or more buffers can be inserted into the net downstream from the stronger driver as indicated in blocks 70 and 96.--

In page 8, second paragraph, please replace with the following:

A11

--Referring to FIG. 1 and FIG. 4, the net which includes driver/receiver 12, driver/receiver 14, and conductive path 16 has not been duplicated because it was previously determined that this net resulted in acceptable noise levels. The remaining net includes driver/receiver 18 and receiver 24 from FIG. 1, new driver/receiver 80, and new driver 82.--

In page 9, first paragraph, please replace with the following:

A12

--Now assume that buffer 92 has been placed within conductive path 84 because it is necessary that signals from driver/receiver 80 arrive at receiver 24 as quickly as possible. Once buffer 92 has been placed, the new question becomes whether the total conductive path length between the output of buffer (i.e., driver) 92 and the input to receiver 24 meets the previously defined criteria for noise.--

In page 9, second paragraph, please replace with the following:

A13

--If the previously defined criteria for noise is not met by the remaining total conductive path length, it is again necessary, at block 96 of FIG. 3, to determine where to place another buffer. Now, the FIG. 2 curve to be used is that curve associated with buffer 92. A new maximum acceptable path length will be determined from that curve, and it may be necessary to add a second buffer such as buffer 96 in FIG. 4.--

IN THE CLAIMS

Please amend the claims as follows. All pending claims after this amendment are listed below for the convenience of the Examiner. Claims amended by the Amendment are indicated as such. Claims new in the Amendment are indicated as such.